

REMARKS

This is in response to the Office Action dated March 2, 2004. Applicant thanks the Examiner for the detailed review of the application and careful consideration of the prior art.

First, Examiner objected to the drawings under 37 CFR 1.84(p)(5). However, applicant has amended the specification to include references to all reference signs 405, 415, 505, 515, 605, and 610.

Second, Examiner rejects applicants independent claim 1 as being obvious in light of Raaijmakers et al. (U.S. 6,482,733), herein referred to as Raaijmakers, and Clem et al. (U.S. 6,518,168), herein referred to as Clem. Examiner states that Raaijmakers does not removing the organic monolayer, re-exposing the portion of the underlying conductor.

Yet, there is no suggestion to combine Raaijmakers and Clem. Raaijmakers is focused on lining dual damascene structures and particularly the openings formed in porous materials. (see Abstract). Examiner sites Raaijmakers sealing layer 148 as applicant's organic monolayer that is formed on the exposed copper layer. Raaijmakers, at col. 16, lines 43-46, disclose the following about sealing layer 148, "The sealing layer 148 (FIG. 10a), however, blocks the pores and prevents entry of reactants after the pores have been blocked, particularly before any high conformality ALD process begins." From this it is clear that Raaijmakers intends sealing layer 148 to be a sealant layer to

protect dielectrics 50 and 56 from conductor leakage. Raaijmakers never discusses, suggests, or infers the sealing layer 148 may be an organic monolayer and/or self-assembled monolayer (SAM).

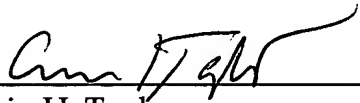
In contrast, Clem discloses a method for creating patterns of material using SAMs. Clem does not disclose etching, masking, or any other damascene processing steps. Rather Clem teaches the use of an applicator 10 coated with SAM forming species 17. When SAMs are formed on substrate 18 from applicator 10, the SAMs are then used to form sol-gel materials in intervening regions 22, which do not have SAMs. Therefore, Clem does not suggest combination with dual damascene processes, as disclosed in Raaijmakers.

Claims 2-26 are rejected by the examiner by combination of Raaijmakers, Clem, and at least one other reference (Jackson, US 5,236,602; Mangat et al., US 6-297,169; Obeng et al., US 6,323,131; or Soininen et al., US 6,482,740). Therefore, applicant respectfully submits that for the reasons stated above claims 1 and 2-26 are now in condition for allowance, since all of the Examiners rejections rely on the combination of Raaijmakers and Clem.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of the present application, the Examiner is invited to contact Edwin H. Taylor at (408) 720-8300.

Respectfully submitted,
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